

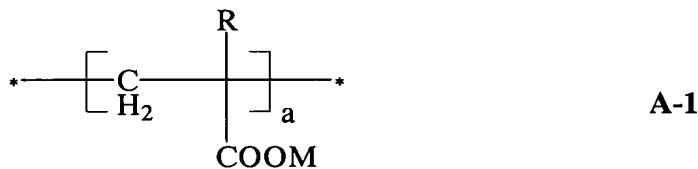
AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

1. (Currently Amended) A modified acrylic polymer obtainable obtained by reacting

(A) a poly(acrylic acid) with endgroups resulting from initiators and/or chain transfer agents that are inert for condensation reactions, said poly(acrylic acid) A-1 having a number average molecular weight of from 500 to 20,000



and

(B) ω molar parts of a monofunctional polyalkyleneglycol-monoalkylether B-1

$\text{HO-(A-O-)}_r\text{-(B-O-)}_s\text{R}^1$ B-1

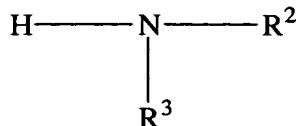
and/or[[,]] and optionally

(C) ρ molar parts of a monofunctional α -amino-polyalkyleneglycol-alkylether C-1

$\text{H}_2\text{N-(A-O-)}_t\text{-(B-O-)}_u\text{R}^1$ C-1

and/or[[,]] and optionally

(D) molar parts of a primary or secondary amine D-1

**D-1**

wherein R represents a hydrogen atom or a methyl group, or a mixture thereof; M represents a hydrogen atom, a C₁ - C₅ alkyl ~~rest group~~ or an alkali metal, an alkaline earth metal or other two or three valent metal atoms, an ammonium or organic ammonium group, or a mixture thereof; each R¹ independently from each other is a C₁ - C₄ alkyl ~~rest group~~; A and B represent alkylene groups with 2 - 4 C-atoms, the mixture of (A-O) and (B-O) ~~may be~~ is formed by either random addition or block addition, and (A-O) ≠ (B-O);

R² and R³ independently from each other represent a hydrogen atom, or an aliphatic, cycloaliphatic, araliphatic or aromatic ~~rest group~~, or R² and R³ ~~may~~ together with the nitrogen atom to which they are bound form a morpholine or imidazole ring system, or another ring systems containing at least one hetero atom ~~like nitrogen, sulfur or oxygen~~; or R² and R³ independently from each other represent oxyalkylene groups of the structure R⁵-(O-R⁶)_v-, wherein R⁵ represents a C₁ - C₄ alkyl ~~rest group~~ and O-R⁶ represents an oxyalkylene group with 2 to 4 carbon atoms, whereby within the same structure R⁵-(O-R⁶)_v-, O-R⁶ ~~can represent~~ optionally represents more than one kind of oxyalkylene group, wherein the mixture ~~may be~~ is formed by either random addition or block addition;

wherein a molar ratio of

a:o:p:q = 1:(0.1-0.95):(0-0.6):(0-0.6), and

wherein p + q < 0.9, and

o + p + q ≤ a;

r, s, t, u and v independently represent integers from 0 - 250;

r + s > 1;

t + u > 1;

in the presence of a catalyst at elevated temperatures ~~following a certain kinetic~~
wherein the degree of reaction is influenced by the ratio of A-1, B-1 and/or and
optionally C-1 and/or and optionally D-1 and the temperature, in which the reaction
can be followed by the decrease of the acid number over time, in which the reaction
can be stopped at different reaction times resulting into in polymers with different
properties, said reaction is stopped

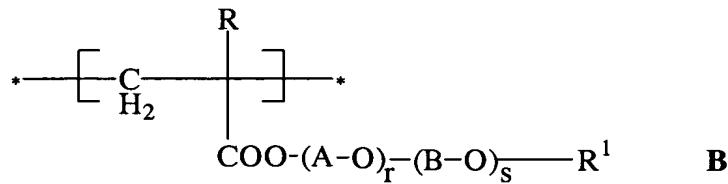
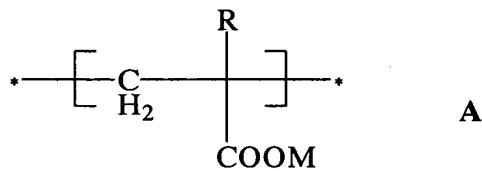
I. at a high slope of decrease of the acid number over the time resulting in
polymers with a high initial water reduction of > 20% and a decreasing slump flow
over time

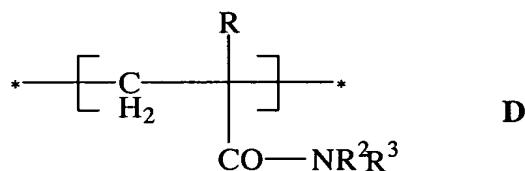
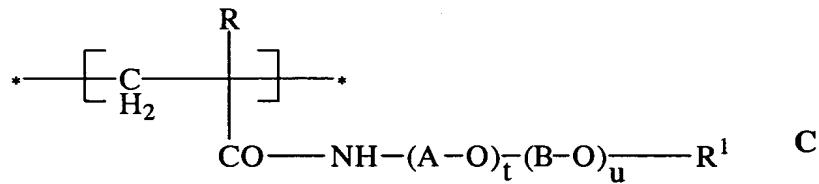
or

II. at a medium slope of decrease of the acid number over time resulting in
polymers with a high or medium initial water reduction of at least 10% and a constant
slump flow over the time or

III. at a small slope of decrease or no decrease of the acid number over time
resulting in polymers with a medium or low initial water reduction of at most 20% and
an increasing slump flow over the time.

2. (Currently Amended) A modified acrylic polymer, ~~obtainable~~ obtained by the reaction defined in claim 1 which is composed of m molar units of the group given by formula A below, o molar units of the group given by formula B below, optionally p molar units of the group given by formula C below, and/or and optionally q molar units of the group given by formula D below, whereby:





wherein R represents a hydrogen atom or a methyl group, or mixture thereof;
 M represents a hydrogen atom, a C₁ - C₅ - alkyl rest group or an alkali metal, an
 alkaline earth metal or other two or three valent metal atoms, an ammonium or
 organic ammonium group, or a mixture thereof;
 each R¹ independently from each other is a C₁ - C₄ alkyl rest group A and B
 represent alkylene groups with 2 - 4 C-atoms, the mixture of (A-O) and (B-O) may be
is formed by either random addition or block addition, and (A-O) ≠ (B-O);

R^2 and R^3 independently from each other represent a hydrogen atom, or an aliphatic, cycloaliphatic, araliphatic or aromatic ~~rest group~~ or R_2 and R_3 may together with the nitrogen atom to which they are bound form a morpholine or imidazole ring system, or another ring systems containing at least one additional hetero atom ~~like nitrogen, sulfur or oxygen~~; or R^2 and R^3 independently from each other represent oxyalkylene groups of the structure $R^5-(O-R^6)_v-$, wherein R^5 represents a $C_1 - C_4$ alkyl ~~rest group~~ and $O-R^6$ represents an oxyalkylene group with 2 to 4 carbon atoms, whereby within the same structure $R^5-(O-R^6)_v-$, $O-R^6$ ~~can represent~~ optionally represents more than one kind of oxyalkylene group, wherein the mixture ~~may be~~ is formed by either random addition or block addition;

r, s, t, u and v independently represent integers from 0 - 250; $r + s > 1$;

$t + u > 1$;

m, o, p, q are numerical values representing the molarity of the constituent units A, B, C and D present in the polymers, in a proportion of

$m:o:p:q = (0.05 - 0.9):(0.1-0.95):(0-0.6):(0-0.6)$,

and wherein $p + q < 0.85$,

and $m + o + p + q = 1$.

3. (Currently Amended) The modified acrylic polymer according to claim 1, ~~characterized in that~~ wherein the number average molecular weight is from 4000 to 100,000.

4. (Currently Amended) The modified acrylic polymer according to claim 1, ~~wherein it is obtainable~~ obtained by a synthesis wherein the reactant A-1 has a number average molecular weight of from 1000 to 10,000.

5. (Currently Amended) The modified acrylic polymer according to claim 1, ~~wherein it is obtainable~~ obtained by a synthesis wherein the reactant B-1 has a number average molecular weight of from 250 to 10,000 and the reactant C-1 has a number average molecular weight of from 250 to 10,000.

6. (Currently Amended) The modified acrylic polymer according to claim 1, ~~wherein it is obtainable~~ obtained by reacting reactants A-1 and B-1, and optionally C-1 and/or and optionally D-1 in the presence of an acid catalyst at a temperature of about 140°C to 250°C.

7. (Currently Amended) The modified acrylic polymer according to claim 1, ~~wherein it is obtainable~~ obtained by a synthesis that is carried out using inert organic solvents as carrier.

8. (Currently Amended) The modified acrylic polymer according to claim 1, ~~obtainable~~ obtained by using reactants A-1 and B-1, and optionally C-1 and/or and optionally D-1, whereby the reaction was stopped at a ~~high~~ slope of the decrease of the acid number over the time resulting in a polymer with a high initial water reduction of > 20% and a decreasing slump flow over time, which can be used especially for precast applications.

9. (Currently Amended) The modified acrylic polymer according claim 1, obtainable by using reactants A-1 and B-1, and optionally C-1 and/or and optionally D-1, whereby the reaction was stopped at a ~~medium~~ slope of the decrease of the acid number over the time resulting in a polymer with a high or medium initial water reduction of at least 10% and a constant slump flow over time, which can be used especially for readymix applications.

10. (Currently Amended) The modified acrylic polymer according to claim 1, obtainable by using reactants A-1 and B-1, and optionally C-1 and/or and optionally D-1, whereby the reaction was stopped at a ~~small~~ slope of the decrease of the acid number over the time to linear behavior resulting in a polymer with a medium or low initial water reduction of at least 20% and an increasing slump flow over time, which can be used especially for slump flow increasing applications.

11. (Previously Presented) The modified acrylic polymer according to claim 1, wherein $p + q \neq 0$.

12. (Withdrawn) An admixture in liquid or solid form comprising at least one modified acrylic polymer according to claim 1.

13. (Withdrawn) The admixture of claim 12, which comprises at least two modified acrylic polymers in various ratios resulting in an admixture with high water reduction and constant slump flow over time.

14. (Withdrawn) The admixture of claim 12 further comprising dispersing agents selected from the group consisting of sulfonated melamine condensates, sulfonated naphthalene condensates, lignosulfonates, substituted maleamid-vinyl-copolymers and acrylic or methacrylic copolymers with polyalkyleneglycol side chains, and mixtures thereof.

15. (Withdrawn) A mortar, concrete, cement or cementitious binder, containing at least one modified acrylic polymer according to claim 1 in an amount of 0.01 to 10% by weight of the binder, said mortar or concrete having a unit content of binder composition of 100 to 800 kg/m³, whereby said binder composition is selected from the group consisting of a cement, a mixture of cement, a latent hydraulic powder, a mixture of latent hydraulic powders, and mixtures thereof optionally together with one or more inert microscopic powder(s).

16. (Withdrawn) The mortar, concrete, cement or cementitious binder according to claim 15, wherein the cement is selected from the group consisting of Portland cement, white cement, high alumina cement, blended cement, and mixtures thereof, and the latent hydraulic or inert microscopic powder is selected from the group consisting of fly ash, slag, natural pozzolane, silica fume, burnt oil shale, metakaolin calcium carbonate, and mixtures thereof.

17. (Withdrawn) The mortar, concrete, cement or cementitious binder according to claim 15, wherein the admixture in liquid or powder form containing the modified

acrylic polymers is added before, during or after the grinding operation of the cement or the cementitious binder.

18. (Withdrawn) An aqueous slurry of microscopic powder containing a modified acrylic polymer according to claim 1, or a mixture thereof, in an amount of 0.01 to 10% by weight of the binder.

19. (Withdrawn) The aqueous slurry of microscopic powder according to claim 18, wherein the microscopic powder is calcium carbonate, gypsum or gypsum based.

20. (Previously Presented) The modified acrylic polymer according to claim 1, whereby at least 0.5 mole-% of B-1 is represented by a structure in which A represents an alkylene group with 2 C-atoms and s=0, or in which B represents an alkylene group with 2 C-atoms and r=0.

21. (Previously Presented) The modified acrylic polymer according to claim 1, whereby 5 - 100 mole-% of B-1 is represented by a structure in which A represents an alkylene group with 2 C-atoms and s=0, or in which B represents an alkylene group with 2 C-atoms and r=0.

22. (Withdrawn) The modified acrylic polymer according to claim 1, whereby at least 0.5 mole-% C-1 is represented by a structure in which A represents an alkylene group with 2 C-atoms and u=0, or in which B represents an alkylene group with 2 C-atoms and t=0.

23. (Withdrawn) The modified acrylic polymer according to claim 1, whereby 5 - 100 mole-% C-1 is represented by a structure in which A represents an alkylene group with 2 C-atoms and u=0, or in which B represents an alkylene group with 2 C-atoms and t=0.

24. (Previously Presented) The modified acrylic polymer according to claim 1, wherein the molar ratio a:o:p:q = 1:(0.1-0.95):(0-0.3):(0-0.3).

25. (Previously Presented) The modified acrylic polymer according to claim 1, wherein the molar ratio a:o:p:q = 1:(0.1-0.95):(0-0.1):(0-0.1).

26. (Previously Presented) The modified acrylic polymer according to claim 1, wherein $p + q < 0.6$.

27. (Previously Presented) The modified acrylic polymer according to claim 1, wherein $p + q < 0.3$.

28. (Previously Presented) The modified acrylic polymer according to claim 2, whereby at least 0.5 mole-% of B is represented by a structure in which A represents an alkylene group with 2 C-atoms and s=0, or in which B represents an alkylene group with 2 C-atoms and r=0.

29. (Previously Presented) The modified acrylic polymer according to claim 2, whereby 5-100 mole-% of B is represented by a structure in which A represents an alkylene group with 2 C-atoms and s=0, or in which B represents an alkylene group with 2 C-atoms and r=0.

30. (Withdrawn) The modified acrylic polymer according to claim 2, whereby 0.5 mole-% of the formula C is represented by a structure in which A represents an alkylene group with 2 C-atoms and u=0, or in which B represents an alkylene group with 2 C-atoms and t=0.

31. (Withdrawn) The modified acrylic polymer according to claim 2, whereby 5-100 mole-% of the formula C is represented by a structure in which A represents an alkylene group with 2 C-atoms and u=0, or in which B represents an alkylene group with 2 C-atoms and t=0.

32. (Previously Presented) The modified acrylic polymer according to Claim 2, wherein

$$m:o:p:q = (0.05-0.9):(0.1-0.95):(0-0.3):(0-0.3).$$

33. (Previously Presented) The modified acrylic polymer according to claim 2, wherein

$$m:o:p:q = (0.05-0.9):(0.1-0.95):(0-0.1):(0-0.1).$$

34. (Previously Presented) The modified acrylic polymer according to claim 2,
wherein $p + q < 0.6$.

35. (Previously Presented) The modified acrylic polymer according to claim 2,
wherein $p + q < 0.3$.

36. (Previously Presented) The modified acrylic polymer according to claim 11,
wherein

$0 < p + q < 0.85$.

37. (Previously Presented) The modified acrylic polymer according to claim 11,
wherein

$0 < p + q < 0.6$.

38. (Withdrawn) An admixture in liquid or solid form comprising at least one modified
acrylic polymer according to claim 8.

39. (Previously Presented) The modified acrylic polymer according to claim 1,
wherein $p+q<0.1$.

40. (Previously Presented) The modified acrylic polymer according to claim 1,
wherein $p+q<0.02$.

41. (Previously Presented) The modified acrylic polymer according to claim 1, wherein $p+q<0.01$.

42. (Previously Presented) The modified acrylic polymer according to claim 2, wherein $p+q<0.1$.

43. (Previously Presented) The modified acrylic polymer according to claim 2, wherein $p+q<0.02$.

44. (Previously Presented) The modified acrylic polymer according to claim 2, wherein $p+q<0.01$.

45. (Previously Presented) The modified polymer according to claim 1, wherein the molar ratio $a:o:p:q=1:(0.1-0.95):(0-0.02):(0-0.02)$.

46. (Previously Presented) The modified acrylic polymer according to claim 1, wherein the molar ratio $a:o:p:q=1:(0.1-0.95):(0-0.01):(0-0.01)$.

47. (Previously Presented) The modified acrylic polymer according to claim 2, wherein the molar ratio $a:o:p:q=1:(0.1-0.95):(0-0.02):(0-0.02)$.

48. (Previously Presented) The modified acrylic polymer according to claim 2, wherein the molar ratio $a:o:p:q=1:(0.1-0.95):(0-0.01):(0-0.01)$.

49. (New) The modified acrylic polymer according to claim 1, derived from polyacrylic acid, polyethyleneglycol-monoethylether and dicyclohexyl amine.